molecular weight fractions of a molecular weight in the range of about 4,000 to about 10,000 daltons, (2) a Yin-Wessler of at least 40, and (3) a ratio of Yin-Wessler to USP titer in the range of 3 to 5, and the physiologically acceptable salts thereof, which mixture of fractions have improved antithrombotic activity in vivo which is higher than that of heparin and a whole anticoagulation activity lower than that of heparin, and said method controlling thrombosis by selectively inhibiting coagulation factor Xa while also having a whole anticoagulation effect.

155. The method of claim 154 wherein the administration is by injection or infusion to the patient.

156. The method of claim 155 wherein the administration by injection is sub-cutaneous.

157. The method of claim 156 wherein the dosage administered sub-cutaneously is from about 1,000 to about 25,000 Yin-Wessler units per ml.

158. The method of claim 155 wherein the administration by injection is intravenous.

159. The method of claim 158 wherein the dosage administered discontinuously intravenously is from about 1,000 to about 25,000 Yin-Wessler units per ml per 25 hours.

160. The of method of claim 154 wherein the administration is intramuscularly in a dosage of from about 1,000 to about 25,000 Yin-Wessler units per ml.

161. A therapeutic composition for controlling thrombosis and decreasing hemorrhaging risks which comprises a therapeutically acceptable carrier and heparinic mucopolysaccharide fractions having constituents of a molecular weight not in excess of about 10,000 daltons, which fractions have (1) a mixture of lower molecular weight fractions in the range of about 2,000 to about 4,000 daltons with higher molecular weight fractions of a molecular weight in the range of about 4,000 to about 10,000 daltons, (2) a Yin-Wessler of at least 40, and (3) a ratio of Yin-Wessler to USP titer in the range of 3 to 5, and the physiologically acceptable salts thereof, which mixture of fractions have improved antithrombotic activity in vivo which is higher than that of heparin and a whole anticoagulation activity lower than that of heparin.

162. The therapeutic composition of claim 161 which is a solution.

163. The therapeutic composition of claim 162 wherein the heparinic mucopolysaccharides fractions are in solution in a concentration of about 1,000 to 100,000 Yin-Wessler units per ml.

164. The therapeutic composition of claim 163 which is a solution of the mucopolysaccharides in a concentration of about 5,000 to about 50,000 Yin-Wessler units per ml.

165. The solution of claim 162 which is apyrogenic.

166. The solution of claim 165 which is sterile.